

# *Platanthera pallida* (Orchidaceae), a New Species of Fringed Orchis from Long Island, New York, U.S.A.

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**ABSTRACT.** Reexamination of the species and hybrids of the simple-lipped group of the genus *Platanthera* sect. *Blephariglottis* shows that several colonies found on eastern Long Island constitute a new species. *Platanthera pallida* is described based upon its recurved lip, reflexed lateral sepals, pale cream coloration, and unusual habitat—dry, interdunal hollows. It was previously referred to as *P. cristata* because of its superficial resemblance to that species and lack of other similar fringed orchises in the northeastern United States.

***Platanthera pallida*** P. M. Brown, sp. nov. TYPE: United States. New York: Long Island, Suffolk County, Montauk, C. S. Bryan, 10 Aug. 1948 (holotype, AMES 65176). Figure 1.

*Platantherae cristatae* (Michaux) Lindley similis, sed ab ea perianthio in alabastro perpallide aurantiaco post anthesin eburneo, labello recurvato ligulato fimbriato, petalis obovatis ad apicem fimbriatis, fimbriis plerumque furcatis, calcaribus obtuso 5–6 mm longo, sepalo medio integro, sepalis lateralis valde reflexis differt.

*Plants* (20–)29–65(–84) cm tall, glabrous and distinctly glaucous; *lower leaves* 2–3, sheathed, strongly keeled, conduplicate, to 25(–30) cm long and 3(–5) cm wide when flattened; *upper leaves* reduced to 3–5 linear bracts below the inflorescence. *Inflorescence* racemose, (18–)24–80(–112)-flowered, (5–)10–20(–27) cm long, 2.5–4 cm diam., densely flowered except in very tall individuals; lower floral bracts usually equal to or often exceeding the pedicellate ovary and decreasing in length upward, about 2.2 cm long. *Perianth* very pale orange-yellow in bud opening to pale cream, petals and lip often aging to a deeper creamy yellow or fading to a dull white; *lateral sepals* 3 mm long, 3 mm wide, reflexed, widest at the middle and tapering to a rounded apex and truncated base; *dorsal sepal* 3 mm long, 3 mm wide, concave, entire and arching forward to partially enclose the fringed petals; *petals* obovate, 3.25 mm long, 2 mm wide, fringed at the tip, the fimbriae usually forked and clearly visible to the sides of the dorsal sepal; *lip* ligulate, 3 mm long, 2 mm wide (exclusive of fringe); recurved or, rarely, descending, the margin with forked fimbriae up to 3 mm long, the fimbriae near the base perpendicular to the lip; *spur* 5–6 mm long, tubular,

strongly curved, either obtuse or bulbous at the tip; nectary orifice T-shaped; *column* with the viscidia 2.5–3 mm apart; *fruit* a capsule, 1–1.6 cm long.

*Illustration.* Photograph in Rickett (1966: plate 20) as *Habenaria cristata*.

*Distribution and ecology.* Currently known only from the Town of East Hampton, Suffolk County, Long Island, New York. Plants growing in dry, interdunal hollows and dune slopes (but never swales); usually with *Pinus rigida*, *Quercus velutina*, *Cladonia* sp., *Smilax glauca*, *S. rotundifolia*, *Toxicodendron radicans*, *Hudsonia ericoides*, *Danthonia* sp., *Agrostis* sp., *Minuartia caroliniana*, *Arctostaphylos uva-ursi*, *Vaccinium corymbosum*, and *Cypripedium acaule*.

*Etymology.* The term *pallida*, pale, is chosen for its appropriate description in comparison to *P. cristata* (Michaux) Lindley and other brightly colored, related species. In the past, these plants have commonly been called the “pale cristata” or “pale fringed orchis.” The latter is recommended for a common name.

*Paratypes.* UNITED STATES. NEW YORK: Long Island, Suffolk County, Town of East Hampton—East Hampton, 23 Sep. 1928, R. Latham 5995 (NYS); East Hampton, 16 Aug. 1929, R. Latham 6634 (NYS), G. E. Lotowycz, J. Hoar, 4 Aug. 1985 (OBPF 9782); Montauk, 11 Aug. 1928, R. Latham 5782 (NYS), 12 Aug. 1928, R. Latham 5782 (NYS); Montauk Point, C. S. Bryan, Aug. 1948 (AMES 80811); Montauk, C. K. Brooks et al., 1 Aug. 1951 (AMES 66346), G. E. Lotowycz, 18 Aug. 1978 (OBPF 8985), 15 Aug. 1979, C. J. Sheviak et al. 1615 (NYS); Napeague, R. Latham, 30 July 1928 (NYS), 11 Aug. 1928, R. Latham 5781 (NYS), R. Latham, 16 Aug. 1929 (NYS), 16 Aug. 1929, R. Latham 7084 (NYS), 18 Aug. 1929, R. Latham 7021 (NYS), G. E. Lotowycz, 18 Aug. 1975 (OBPF 8111), 15 Aug. 1979, C. J. Sheviak et al. 1606 (NYS), 17 Aug. 1984, R. E. Zaremba 1503 (NYS), G. E. Lotowycz, 4 Aug. 1985 (OBPF).

*Platanthera pallida* is distinguished from other closely related taxa by the following key.

KEY TO THE SMALL-FLOWERED (LIP LESS THAN 9 MM LONG), FRINGED SPECIES OF *PLATANTERA* SECT. *BLEPHARIGLOTTIS* OF NORTH AMERICA

- 1a. Spur less than 10 mm long; shorter than ovary.
- 2a. Lip recurved, lateral sepals reflexed, dorsal sepal entire, spur 5–6 mm long, obtuse;



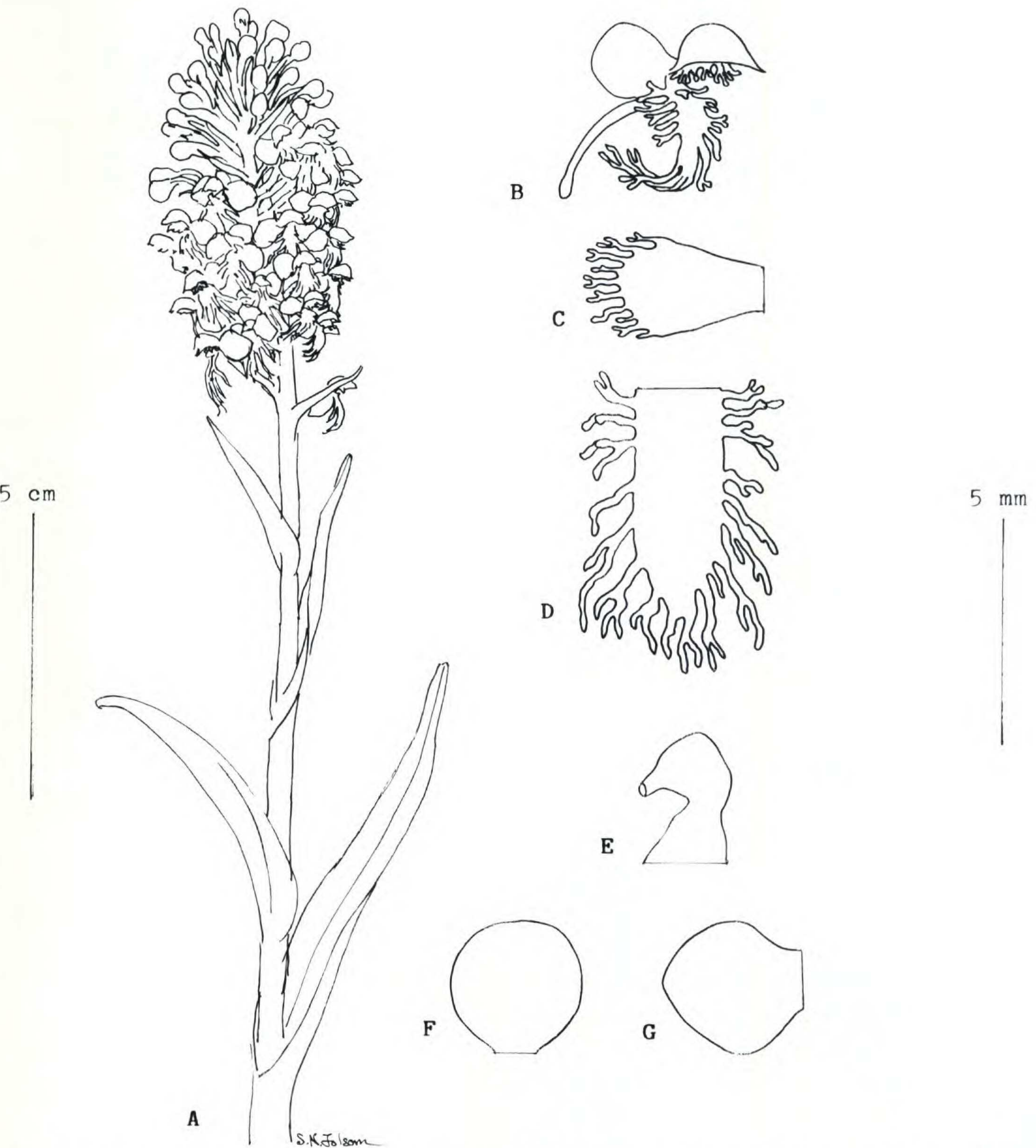


Figure 1. *Platanthera pallida* P. M. Brown. —A. Habit —B. Perianth, front/side view. —C. Petal. —D. Lip. —E. Column, side view. —F. Dorsal sepal. —G. Lateral sepal.

- perianth cream-colored ..... ally 3 cm or more in diameter ....

.....*Platanthera pallida* P. M. Brown

.....*Platanthera ×bicolor* (Raf.) Luer
- 2b. Lip projecting forward, lateral sepals por-  
rect, dorsal sepal emarginate, spur 7–8  
mm long, acute; perianth orange to yellow  
.....*Platanthera cristata* (Michaux) Lindley
- 1b. Spur greater than 10 mm long; exceeding ova-  
ry; perianth pale orange, yellow, cream or near-  
ly white.

3a. Spur 10–15 mm long, exceeding ova-  
ry ... *Platanthera ×canbyi* (Ames) Luer

3b. Spur greater than 15 mm long; great-  
ly exceeding the ovary; raceme usu-
- The simple-lipped, fringed species of *Platanthera* constitute a significant part of section *Blephariglottis*, and are some of the showiest members of the Orchidaceae in eastern North America. Of the five species that comprise this group, three, *P. blephariglottis* (Willd.) Lindley, *P. ciliaris* (L.) Lindley, and *P. cristata*, are widespread throughout the East (Luer, 1975), while two, *P. chapmanii* (Small)



Luer emend. Folsom (Folsom, 1984) and *P. integrilabia* (Correll) Luer (Zettler & Fairey, 1990), are of restricted and local distribution. *Platanthera blephariglottis* includes variety *blephariglottis*, variety *conspicua* (Nash) Luer, and forma *holopetala* (Lindley) P. M. Brown (Brown, 1988). Three putative hybrids occur, *P. ×bicolor* (Raf.) Luer (*P. blephariglottis* var. *conspicua* × *P. ciliaris*), *P. ×canbyi* (Ames) Luer (*P. blephariglottis* var. *conspicua* × *P. cristata*) (Luer, 1975), and *P. ×channellii* Folsom (*P. ciliaris* × *P. cristata*) (Folsom, 1984). Several other hybrids have been reported, but none have received binomials. The description of *Platanthera pallida* (Fig. 1) adds a new species to this list.

Growing among *Pinus rigida* in dry, interdunal hollows on eastern Long Island, New York, is a *Platanthera* with small flowers, short spur, and a superficial resemblance to *P. cristata*. The most obvious difference is the uniform pale cream color of the small flowers. Unlike typical *P. cristata* in the north, the plants are locally abundant.

Detailed examination and observations of *P. cristata* throughout its range, including all known populations from Long Island, have been made to see if they reveal morphological differences. Measurements were taken of the critical characters, i.e., petals, sepals, lip, spur, cilia, and column, of 327 herbarium specimens and 128 living specimens, including 78 plants growing on Long Island. Numerous photographs and drawings, published and unpublished, were also reviewed. Special attention was given to those designated as “light yellow or pale” in coloration. With the exception of the plants in question, all specimens and living material examined fell well within the criteria for typical *P. cristata* (Correll, 1950; Luer, 1975).

Sheviak suspected that the pale plants from eastern Long Island were polyploid and of hybrid origin. He collected material, did a chromosome count, and determined that they are diploid with a count of  $2n = 42$  (C. Sheviak 1606, NYS).

Herbarium specimens and living plants of the northern hybrids, *P. ×canbyi*, *P. ×bicolor*, and *P. ciliaris* × *P. blephariglottis* var. *blephariglottis* (reported from Michigan), were also examined to see if they might be similar to the Long Island plants. They were found to be distinct in all respects.

*Platanthera pallida* shows insufficient features to assume its parentage is the same as *P. ×canbyi*. Although the small flower size and pale coloration can be found in many plants of *P. ×canbyi*, the longer spur characteristic of that hybrid is lacking in *P. pallida*. The reflexed sepals and recurved lip, which are critical features of *P. pallida*, are also

present in *P. blephariglottis* var. *blephariglottis*. Comparison with plants from Michigan that appeared to be the cross between *P. ciliaris* and *P. blephariglottis* var. *blephariglottis* showed no similarities; the putative hybrids are much larger than *P. pallida* and the spur much longer, as it is in both parents.

One of the remarkable aspects of *P. pallida* is the uniformity of its floral morphology. All the critical floral characters, i.e., perianth dimensions, color, positioning of floral parts, have little, if any, variation throughout all populations.

*Platanthera pallida* occurs as three populations in two sites in the Town of East Hampton, eastern Long Island. The plants appear to have been first discovered by Roy Latham in 1926 (Latham, 1940). By 1948, and in subsequent years, the stations had been visited by several botanists and orchid enthusiasts (Lamont et al., 1988).

Latham's initial site near Montauk supports two distinct current populations. They are separated by nearly ¼ mile of duneland. In each of these populations the plants are widespread and somewhat scattered, but retain their habitat preference. Adjacent to the areas that support *P. pallida* are numerous swales and bogs. Typical *P. cristata*, if present, would be found in these wetter areas, as it is in the Pinelands of New Jersey, a region of similar topography. Careful searches have revealed no other species of *Platanthera* in either the immediate area or for several miles around.

The other population is located west of Napeague Harbor. Several specimens collected by Latham (NYS) in 1928–1929 and simply labeled “Napeague” may be from this site. It was not until 1975 that G. E. Lotowycz found the current site and collected her first specimen—as *P. cristata*—from there. In contrast to the Montauk site, where the plants are widely scattered, here *P. pallida* is concentrated in a much smaller area and in larger numbers. Again, there are adjacent swales and small bogs, but no other *Platanthera* species to be found. Companion plants are essentially the same in both locales. *Platanthera pallida* is consistently observed to be restricted to the oldest, most stable *Pinus rigida* stands within the dunes.

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